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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,247	09/15/2003	David Kisela	RYLZ 2 01009	2398
27885	7590	08/01/2006	EXAMINER	
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			REDDING, DAVID A	
			ART UNIT	PAPER NUMBER

1744

DATE MAILED: 08/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/662,247	KISELA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David A. Redding	1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/26/04; 9/15/03</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It's indefinite as to what structure is defined by "omni wheel".

Claims 1-37 rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: means to provide for "autonomous" function as defined in the preamble of the claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-5,9,10,13-19,25-28, are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,929,679 (Wallace et al.) in view of USP 5,781,960 ('960).

Wallace et al. disclose an autonomous canister vacuum cleaner comprising a first module (110) including a suction source (220), a hose (130) connected as claimed, a second module (120) spaced from the first module (110) and connected to a second end of the hose (130), the second module (120) comprising a drive housing (332) including a drive system (310,314) and a nozzle section (334) . The drive system of the second module includes a first drive motor (310) and independent second drive motor (314). The output shafts of the motors are shown in figure 3. The wheels are directly attached to the shafts and therefore are "clutchless". The second module (120) includes a brushroll assy. (320) including a motor which one skilled in the art knows include belt and gear drives. Wallace et al. disclose that the second module (120) is equipped with a variety of sensors including mechanical touch which would inherently distinguish the type of floor (col. 7, line 18-28).

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The second module (120 housing (332) is shown having a bumper consisting of a front bumper bordered on each side by corner bumpers. The disclosed acoustic dirt sensors would operate as define in claims 25 and 26. The nozzle section is electronically connected to the first module (110) via a wire harness (352). The first module (110) also includes a drive system (202, 204). Wallace et al. also discloses the use of encoders (odometer) to determine the motion and speed of the modules (col.6, lines 40-4; col. 7, lines 18-20). Further, the hose (130) is considered to extend longitudinally over the front bumper. The Wallace et al. patent does not disclose a nozzle which is pivotally mounted to the drive housing. The '960 patent discloses a cleaning robot which includes a nozzle assy. (47) which is pivotally mounted to the housing via an arm (48) and ball-joint (49). It would have been obvious to one skilled in the art to provide the pivoting nozzle assy. of the '960 patent in the second module (120) of Wallace et al. in view of the know advantage that the pivoting nozzle assy. is positively biased against the floor.

Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,925,679 (Wallace et al.) in view of USP 6,65,156 (Clark et al.).

Clark et al. discloses a robotic vacuum which includes two wheels (11, 11a) which are independently driven and controlled and a castor wheel (6) which is considered to be functionally equivalent to the claimed "omni wheel". The drive motors (20, 21) are coupled to respective wheels (11, 11a) by reduction gearing, not shown (col.8, lines 50-55).

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It would have been obvious to one skilled in the art to provide the wheel drive system and castor of the Clark et al. cleaner to the second module of the Wallace et al. patent in order to provide greater motion control of the second module.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,925,679 (Wallace et al. and USP 5,781,960 ('960) as applied to claim 10 above, and further in view of USP 4,953,252 (Fukuda et al.).

Fukuda shows a cleaning head (40) having a hose connecting to the head below the highest point of the head. It would have been obvious to one skilled in the art to include the hose to head arrangement of the Fukuda et al. patent as an alternative design in the hose to head connection of the Wallace et al. patent.

Claim 21,22,23,24 is rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,925,679 (Wallace et al.) and USP 5,781,960 ('960) as applied to claim 1 above, and further in view of USP 2004/0187249 (Jones et al.).

The back-side of the housing (334) is considered to constitute a bumper. Jones et. al shows a bumper (23) attached to a wall of the cleaning head housing (see figure 2). It would have been obvious to provide the bumper/housing arrangement of the Jones et al. publication to the cleaning head of Wallace et al. or the '960 patent in view of the known advantages and benefits as disclosed in the Jones et al. publication. Further, it would be obvious the bumper of the Jones et al. publication could be provided in two semi-circular parts.

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Claims 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over USP 6,929,679 (Wallace et al.) in view of US publication 2004/0187249 (Jones et. al).

Wallace et al. disclose an autonomous canister vacuum cleaner comprising a first module (110) including a suction source (220), a hose (130) connected as claimed, a second module (120) spaced from the first module (110) and connected to a second end of the hose (130), the second module (120) comprising a drive housing (332) including a drive system (310,314) and a nozzle section (334). The first module (110) includes a drive system (202, 204), dirt container (230) and suction source (202). The drive system of the second module includes a first drive motor (310) and independent second drive motor (314). The output shafts of the motors are shown in figure 3. The wheels are directly attached to the shafts and therefore are "clutchless". The second module (120) includes a brushroll assy. (320) including a motor which one skilled in the art knows include belt and gear drives. Wallace et al. disclose that the second module (120) is equipped with a variety of sensors including mechanical touch which would inherently distinguish the type of floor (col. 7, line 18-28). The second module (120) housing (332) is shown having a bumper consisting of a front bumper bordered on each side by corner bumpers with the back of the housing (332, 334) constituting a back bumper. The front bumper constitutes the "upper bumper". The Wallace et al. patent is silent as to the details of the construction of the bumper. The Jones et al. publication disclose an autonomous cleaner having a bumper (23) connected to the housing (21) via an attachment arm 23RSM and a biasing spring (paragraph [0029; 0030]).

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Jones et al. also discloses an attachment arm connected to the bumper (23) and a shutter which connected to a sensor ([0031]). It would have been obvious to substitute the bumper system of the Jones et al. publication for the bumper system in the Wallace et al. second module since both of the cleaner heads are used in autonomous floor-cleaning systems.

***Allowable Subject Matter***

Claims 20,36,37, would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

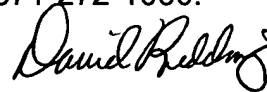
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Redding whose telephone number is 571-272-1276. The examiner can normally be reached on Mon.-Fri. 6:00 - 3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran-Piazza can be reached on 571-272-1224. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



David A Redding  
Primary Examiner  
Art Unit 1744

DAR